

REMARKS

This paper is filed in response to the office action mailed on June 30, 2004. Claims 1-12 stand rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,465,293 ("Park") in view of U.S. Patent No. 6,649,965 ("Takada"). In response, claim 1 has been amended for clarification purposes only and applicants respectfully traverse the rejections based upon the following remarks.

At the outset, under MPEP §§ 2142 and 2143,

[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.

Citing, In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); *see also* MPEP § 2143-§ 2143.03 for decisions pertinent to each of these criteria.

Applicants respectfully submit that no combination of Park and Takada can establish a *prima facie* case of obviousness under §§ 2142 and 2143 and therefore the obviousness rejection is improper and should be withdrawn.

First, claim 1 requires the sequential formation of a tunnel oxide film, a first polysilicon film and a hard mask film. See part (a) of claim 1. In contrast, Park's tunnel oxide film is clearly identified as layer 15 in the sentence bridging columns 2 and 3 of Park. Park then teaches the formation of a polysilicon layer 16 on the tunnel oxide film 15 (see the description of Figs. 2C and 2D at column 2, lines 62-65). However, Park then clearly departs from the scope of claim 1 because Park in no way teaches or suggests the formation of a hard mask film *on the polysilicon layer 16*. See Fig. 2F and column 3, line 9 where Park discusses the formation of a dielectric film 17 on the polysilicon layer 16.

Thus, Park does not teach or suggest part (a) of claim 1 which requires the formation of a hard mask film on a first polysilicon film. Park is deficient as a base reference because it does not teach or suggest this concept. Further, Park also fails to teach part (b) of claim 1 because it does not teach or suggest the etching of a hard mask film and first

polysilicon film and tunnel oxide film to form a trench or the use of an oxide film to bury or fill the trench as recited in part (c) of amended claim 1. As a result, Park also fails to teach or suggest part (d), the removing of the hard mask film (which as recited in claim 1 is deposited on the first polysilicon film and not taught or suggested by Park) or the cleaning process carried out on the oxide film that leaves a portion of the sidewall of the first polysilicon film exposed as recited in part (e) of claim 1. Park also fails to teach or suggest the polishing or cleaning procedures recited in amended claim 1.

Park so disparate from amended claim 1 that there is no possible way for the Takada reference to supplement Park in the numerous ways required to establish a *prima facie* case of obviousness. Takada is only cited for the proposition that it teaches various control parameters. However, Takada is not cited for, nor does it teach the manufacturing steps recited in amended claim 1. Because Park is clearly so deficient in reciting the manufacturing steps of amended claim 1, no combination of Takada and Park can teach or suggest all of the limitations of amended claim 1 and there is clearly no suggestion or motivation to make the numerous modifications required to establish a *prima facie* case of obviousness as no suggestions or motivations are found in either Park or Takada. Thus, the obviousness rejection is improper for at least two reasons under the guidelines of §§ 2142 and 2143.

Applicants earnestly solicit an early withdrawal of the obviousness rejection and the passing of this case to allowance. If the examiner has any further questions regarding this application, she is invited to telephone the undersigned at the number listed below.

The Commissioner is authorized to charge any fee deficiency required by this paper, or credit any overpayment, to Deposit Account No. 13-2855.

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Respectfully submitted,

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